



The Raleigh Amateur Radio Society's **EXCITER**

GET INVOLVED

- RARS General Membership meeting: Second Tuesday of the month.
- The RARS net meets every night except Saturday @ 8 p.m. on 146.640.
- The RARS Technical & Trader's net: Saturdays @ 8:00 PM on 146.64.
- RARS meets for a monthly dinner on the First Tuesday of each month.



PUBLIC SERVICE EVENTS

Interested in helping? Visit
<http://www.rars.org/public-service.php>

frequently for our 2017
ham public service
schedule.

RARS General Meeting

Topic: Bring'em back from the dead. Old radio restoration, by Charles A. Davis Sr. WA3UTC.

Date: September 12, 2017

Time: Meeting at 7:30PM

Informal gathering and refreshments from 7 - 7:30 p.m.

Where: Ridge Road Baptist Church. 2011 Ridge Rd., Raleigh

New HAM / Elmer meeting, 6:00 p.m. before member meeting

Tadd Torborg, KA2DEW, Elmer Coordinator

[Click here for more information.](#)

President's Message

RARS President's Message

First off, my prayers are with the folks in Texas after incurring the wrath of Hurricane Harvey. That being said, it was nice seeing people from across all lines joining together to assist the citizens of the Houston area in attempting to rebuild their lives. Has anyone monitored any of the hurricane nets, or maybe even assisted with relaying traffic to local friends and relatives?

Labor Day has come and gone and along with it the

[Continued on page 3](#)

RARS Officers

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VICE PRESIDENT

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The Raleigh Amateur Radio Society

The Raleigh Amateur Radio Society, Inc. (RARS) was founded in 1969 and continues to serve and support the amateur radio community in the greater Triangle area. In 1999, the society incorporated a new RARS and obtained 501(c)(3) non-profit tax status.

The objectives of the club are to promote worldwide friendship through amateur radio; to be of public service by providing radio communications in times of disaster, emergency, or civic needs; to educate members in radio technique, and to provide training classes to assist in obtaining amateur radio licenses.

Anyone interested in amateur radio is eligible to apply for membership. Dues for regular licensed amateurs are \$18 per year (from July 1 through June 30). Additional immediate family members pay \$5 each per year. Dues for licensed amateurs older than 59 or younger than 16 are \$12 per year. Dues for non-licensed associate members are \$9 per year. Applications for membership may be obtained from the treasurer or on the RARS website (www.rars.org).

Exciter

The Exciter is the official newsletter of the Raleigh Amateur Radio Society. It appears each month as a PDF on the RARS website at www.rars.org. Members receive email notification when the latest version is available. Please provide your email address to the Treasurer.

The Exciter welcomes articles, advertisements, and other contributions. To submit a piece to the newsletter, please contact the Editor. The Editor reserves the right to edit any and all pieces. The submission deadline for each month's Exciter is the third Friday of the preceding month. All submissions must be final. Drafts are not accepted.

The views expressed in the Exciter are those of the individual authors and do not necessarily reflect the views of the Editor or RARS.

Tom Lewis, N4TL, editor (editor@rars.org)

For Your Information

RARS General Meeting

Date: **Second** Tuesday of each month

Location: Ridge Road Baptist Church 2011
Ridge Road Raleigh, NC, 27607

Time: People begin arriving at 7 p.m. The meeting officially begins at 7:30 p.m.

RARS Monthly Dinner

All members and guests are welcome to the monthly (first Tuesday) RARS Supper, 6:30PM, at the Golden Corral Restaurant, 6129 Glenwood Ave., Raleigh. Informal and Dutch, just bring your appetite and best rag to chew. 73, Chuck, K4HF

RARS Repeaters in Raleigh

146.640 and 444.525

Join us for the nightly RARS net at 8 p.m. on the 146.640 repeater. All hams holding a Technician class license or higher are invited to check in. We welcome both RARS and non-RARS members to the net.

There is a net Listing on the RARS website click here. <http://www.rars.org/nets.php>

VE Testing

The RARS VEs will accept walk-in testing in February, May, August and November at 5:30PM, prior to RARS membership meetings at Ridge Road Baptist Church; the RARSfest in April; the Cary Swapfest in July; the JARS-Fest in November; and following RARS license classes. Please bring a photo ID, your original and a copy of your current license, your \$14 exam fee, and any valid CSCEs that prove passing elements beyond that of your current license. Visit www.rars.org for more information.

President's Message continued

Shelby Hamfest. It was nice to see a great representation from RARS among the crowd of vendors and customers. Autumn means the leaves will soon be leaving the trees. It's time to stock up on wire and other supplies to build new dipoles and mend old ones.

I'd also like to take this opportunity to thank all those who have volunteered their time to the various license classes RARS has conducted this year. We still have a couple to go. This growing effort has resulted in a large group of new and upgraded ham licensees. Thanks also to the RARS VE team, who has administered tests after each class in addition to the quarterly pre-meeting sessions and those at RARSfest, Cary Swapfest, and JARSfest.

Hopefully everyone had a great summer and enjoyed their dream vacation. Now that many outdoor activities will dwindle down, it's time to start up those indoor activities, as in ham radio. The cooler months are a great time to check in on the local VHF nets and regional HF nets. It is also a good time to participate in a few contests and chase some DX stations.

73, Dennis NC4DK

The military is trying to bring back the use of HF radio.

Eight Prattville Army National Guard members from the 231st Military Police Battalion armory traveled to Fort McClellan for specialized training in ham radios earlier this month.

The military is trying to bring back the use of HF or high-frequency communications in the service rather than having sole dependence on satellite communication.

With today's email and cellphone communication, radios now are used primarily during natural disasters and emergency situations such as 9/11, Hurricane Katrina and Hurricane Sandy when high cellphone use can overload the satellite system.

Special radio frequencies can communicate with emergency management agencies during such times.

Joel Black, a member the Region 4 Army Military Auxiliary Radio Service, or Army MARS, said the radio is much more efficient than satellite communications.

MORE AT:

<http://www.govtech.com/em/safety/Ham-Radio-Operators-Train-National-Guardsmen.html>

73, Curt Phillips W4CP

RARS August Birthdays

Dave	KK4BPM	09/02
Jimmie	KM4DJR	09/02
Wilbur	WD4RDT	09/03
Andy	KD4FHF	09/04
Mary Jo	K4MJL	09/05
Lou	K4BYN	09/07
Joseph	WB4HXM	09/09
Lewis	N4NCT	09/11
Dean	KN4BED	09/11
Kevin	KN4BEG	09/13
Sheridan	KN4CUS	09/13
Sandy	AC1Y	09/16
Robert	W4MBD	09/16
Bill	K4TF	09/19
Charles	W2WNC	09/20
Larry	K4MWE	09/22
Vinny	KN4DJJ	09/24
Justin	AJ4MJ	09/25
Steve	KI4YXJ	09/25
David	AB4MB	09/26
Chris	KN4DJI	09/27
Julie	WE3T	09/27

New RARS Members

Buddy Clifton	Not Licensed
Tracy Muhlbauer	KN4FHX
Glen Smith	KN4FIB
James Mims	KN4FHQ
Mahesh Balasubramaniam	Not Licensed
Charles Bryant	KN4FHP

RARS Meeting Door Prize Winners



KE4PAX Greg, Alexis Miller (no call), Johnny Johnson (no call),
W4CRG Craig and KF4VXJ David

August 8, 2017 RARS meeting Show and Tell

Marty W4MY showed a Korean Ham magazine published by KARL (Korean Amateur Radio League).

Albert N4AGG showed, Power-Pole distribution boxes he built.

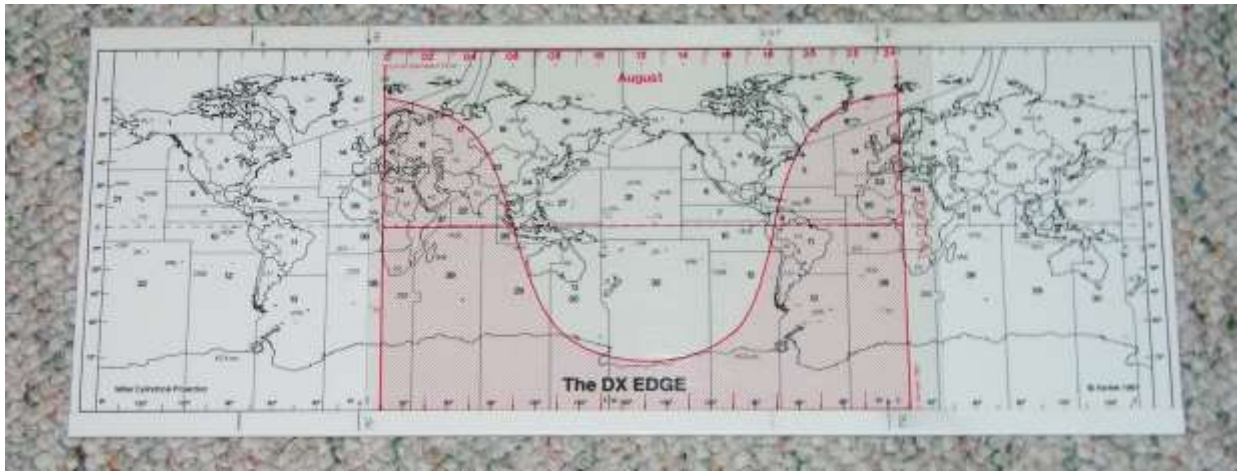
Al N4EII showed a quarter wave ground plane antenna for 2m made with flexible wire..

RARS meeting Show and Tell continued



Alan AB4OZ showed EMI filters built in scrap boxes, photos of his tower made from a ladder and several test boxes.

RARS meeting Show and Tell continued



Tom N4TL showed a DX Edge mechanical Sunrise and Sunset indicator.



Roger K4CLK showed a transformer load tester used to determine transformer capability.

RARS meeting Show and Tell continued



??? built a GPS unit and a solar power supply with flex solar panels and true sinewave output.
If you built this, please let me know and I will correct this entry, 73 Tom N4TL .

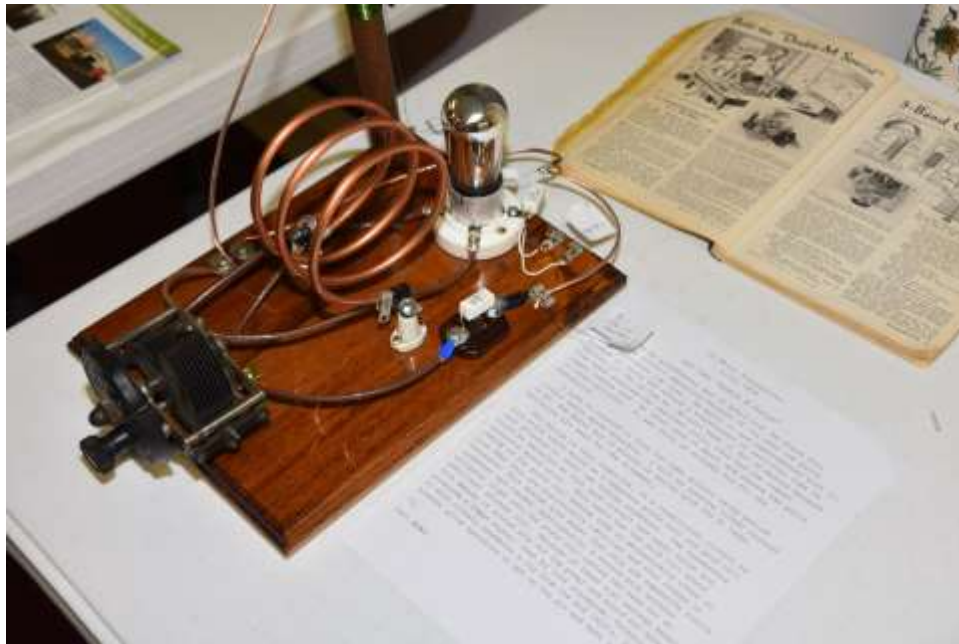


Johnny WA9SZL showed a battery charging power supply made from scrap video game parts.



Adrian KM4CSH, built a GPS 1 pulse per second timing standard

RARS meeting Show and Tell continued



Carl W8WZ built a 1930's single tube transmitter that matched one his grandfather built in 1934.



Gary KN4AQ & Israel NC4IP Showed DMR radios which have more penetration locally then DStar. They talked about DMR and demonstrated a connection thru a repeater and an internet hot spot.

*New HAM / Elmer meeting, 6:00 p.m. before the
member meeting*

Tadd Torborg, KA2DEW, Elmer Coordinator

*The New Hams meeting is held every month before the regular
RARS meeting. We'll try to start by 6pm. We try to address topics
in a manner that will be of help to hams in their first year of oper-
ation.*

*Tadd / KA2DEW
tadd@mac.com
Raleigh NC FM05pv*



In August the rookie-ham new-ham meeting built 1/4 wave two meter ground planes and tested them with SWR meters, directional wattmeters and antenna analyzers.

Good fun was had by all.

Future Hamfests

A full list of Hamfests can be found at the [ARRL website](#).

09/09/2017 | Virginia Section Convention (Virginia Beach Hamfest)

Location: Virginia Beach, VA

Type: ARRL Convention

Sponsor: Tidewater Radio Conventions

Website: <http://virginiabeachhamfest.com>

10/08/2017 | Maysville Hamfest

Location: Maysville, NC

Type: ARRL Hamfest

Sponsor: Maysville Hamfest Association

<http://www.arrl.org/hamfests/maysville-hamfest-7>

11/19/2017 | [JARSFest 2017](#)

Location: Benson, NC

Type: ARRL Hamfest

Sponsor: Johnston Amateur Radio Society

Website: <http://www.jars.net>

03/31/2018 | [North Carolina State Convention \(Raleigh Hamfest\)](#)

Location: Raleigh, NC

Type: ARRL Convention

Sponsor: Raleigh Amateur Radio Society

Website: <http://rars.org/hamfest>

Interesting websites

Shelby Hamfest Pictures taken by Nick England K4NYW.

http://www.virhistory.com/ham/shelby_2017.htm

Pictures taken by N4TL at the Antique Wireless Convention in Rochester NY
August 2017.

<https://www.flickr.com/photos/97551557@N08/albums>

Interesting websites continued

RARS is on Facebook

<https://www.facebook.com/Raleigh-Amateur-Radio-Society-273341139963/>

FT8 Mode is Latest Bright Shiny Object in Amateur Radio Digital World

<http://www.arrl.org/news/ft8-mode-is-latest-bright-shiny-object-in-amateur-radio-digital-world>

Don't forget to turn off any notch filters on your radio when operating digital modes.

PSK Reporter

<https://pskreporter.info/pskmap.html>

This website reports information sent to it by WSJT-X and other digital software. It works with many modes not just PSK. You can select a mode and find out how many station on the air are using that mode. The WSJT-X software on your station computer will automatically report to the pskreporter website what stations your station is hearing. You have to enable PSK Reporter Spotting in the settings menu to enable this. With pskreporter, you can call CQ and after a few minutes check the map to see how many other stations are receiving you. To do that change the variables at the top of the pskreporter screen to the band you are on, then set signals sent by and your call. Set the mode you are using and then over the last 15 minutes. Call CQ for a few minutes, wait a few minutes, then click go in psk reporter and see if anyone is receiving you.

It is also interesting to look at North and South Korea on the map when they are in darkness. The difference in the two countries is remarkable. Do not zoom in too much or the dark and light areas are not shown.

DX Sherlock

<https://www.dxmaps.com/spots/mapg.php>

N3TUQ

<https://n3tuq.com/dxmap.php>

This map shows reports from the VE7CC DX Cluster.

References for many digital modes.

<https://physics.princeton.edu/pulsar/k1jt/refs.html>

Interesting websites continued

Announcing: WSJTX.net

A new web site which helps with the configuration and use of WSJT-X is now available. Also included is a proposed band plan for 6 and 2 meters for Region 2.

<https://wsjtx.net/home.html>

While it is not complete, comments are welcome. Please use the comments link in the home page.

73 de Sebastian, W4AS

Future RARS 2017 Meeting Topics

Titles, topics, and speakers subject to change.

9/12/2017	Bring'em back from the dead. Old radio restoration	Charles A. Davis Sr. WA3UTC
10/10/2017	RARS Officers nominations RARS Auction	Election committee & TBD
11/14/2017	RARS Officers election and digital mode WSPR WSPR (pronounced "whisper") stands for "Weak Signal Propagation Reporter."	Election committee & Tom McKee, K4ZAD
12/12/2017	RARS pot luck Holiday party. Sign up at the RARS website. RARS Officers induction.	Election committee

Become an Amateur Radio Operator



The Raleigh Amateur Radio Society is offering Technician Level

Amateur Radio Licensing Classes

at the

Wake Tech Beltline Education Center located at 3200 Bush St, Raleigh, NC 27609 in room 404D.

The course will consist of four 5 hour classes and is designed to teach all of the information that is needed to earn the Technician Level Amateur Radio License and begin enjoying the hobby of ham radio.

Class Schedule:

Saturday, SEPT 16	8:00 AM - 1:00 PM
Saturday, SEPT 23	8:00 AM - 1:00 PM
Saturday, SEPT 30	No Class
Saturday, OCT 7	8:00 AM - 1:00 PM
Saturday, OCT 14	8:00 AM - 4:00 PM
(test administered 1:30 – 4:00 PM on OCT 14)	

Capacity is limited to 20 students and registration is required. Due to limited seating no walk-ins will be accepted. Students under age 12 must be accompanied by an adult.

Students must come with the textbook ARRL Ham Radio License Manual 3rd Edition

ISBN: 978-1-62595-013-0 which can be purchased at this link:

<http://www.arrl.org/ham-radio-license-manual>

The non-refundable cost for the course is \$10 payable in cash at the first session. For students over age 18 there is an additional fee of \$14 for the license test payable on the day of the exam.

The instructor is Mr. Curt Phillips whose amateur call sign is W4CP. Curt has been licensed for more than 40 years, holds an Amateur Extra class license, and has many years of experience teaching amateur radio classes. He has taught technical courses at several area community colleges and for the NC State University Industrial Extension Service, NC A&T's Center for Energy Research and Technology as well as UNC-Charlotte and Virginia Tech.

To ask questions or register for the class please e-mail RARS Education Director Carl Davis at w8wz@aol.com

Minutes

Raleigh Amateur Radio Society
Board of Directors Meeting
June 20, 2017 and July 18, 2017

These minutes will be published after they are approved at a board meeting.

MINUTES

Raleigh Amateur Radio Society
General Membership Meeting
August 8, 2017

The monthly membership meeting of the Raleigh Amateur Radio Society met at the Ridge Road Baptist Church in Raleigh. The meeting was called to order by Vice President Tom, N4TL, at 7:30 p.m.

The Pledge of Allegiance to the Flag was said.

Alan AB4OZ reminded those present not to make on-air announcements of their vacations before-the-fact as one never knows who is listening. The CFARS Hamfest will be at the Cumberland Shrine Club.

There were 43 members present, which constituted a quorum. A quorum being present, a motion to accept the minutes of the July 11, 2017 meeting, as published in the Exciter, was made, seconded and approved.

Continuing Announcements:

The RARS Dinner takes place monthly on the first Tuesday (next: September 5th) at 6:30 p.m., at the Golden Corral, 6129 Glenwood Ave.

The RARS Board meeting takes place monthly on the third Tuesday (next: August 15th) at 7:00 p.m. in a conference room here at the Church. Members are invited to attend.

An After-meeting gathering takes place after each Membership meeting, at Applebee's, at Hillsborough and Gorman Streets.

Minutes continued from the previous page

A New Ham/Elmers meeting with new hams and anyone interested takes place before each membership meeting, at 6:00 p.m. at the church.

Guests: Tom N4TL introduced guests Paul N4BYQ, Grant KN4EOP, Ronnie KG4AZW, Shaun KM6BRF, Tracy (call pending), and Glen (call pending). Also present were Margaret Herring, Johnny Johnson, Charles Lewis and Christian McCann.

Officers' Reports:

Vice President: Tom N4TL: You can see all remaining 2017 program subjects in The Exciter.

Treasurer: Greg, KE4PAX, submitted a Treasurer's Report (attached to file) which shows 300 members this month. Anyone desiring additional treasury information may contact Greg for details.

Secretary: Bob NC1X- No report

Board & Committee Reports:

Education Director (Carl W8WZ): Thanked Mike WA4BPJ for teaching the recently completed General class. A Technician class will begin at 0800 Saturday September 16, at the Wake Tech campus. It will meet weekly through October 14 except for Sept 30. VE testing will occur at 1330 on October 14. See the RARS website or contact Carl at w8wz@aol.com.

Public Service (John K3RHJ): (not present). The Public Service calendar is at www.rars.org/public-service.php.

RARSfest (Ian N0IAN): RARSfest will be on Easter weekend next year (March 31, 2018).

NC QSO Party (Marty W4MY): The next NC QSO Party will be on the last weekend in February, 2018.

At-large Directors: no reports

Old Business: none

New Business: Elections are coming If you want to serve your chance is coming.

Prize drawing – Prizes were won by W4CRG Craig, Johnny Johnson (no call), KF4VXJ David, Alexis Miller (no call), and KE4PAX Greg.

Minutes continued from the previous page

Jerry Agliata, W2GLA, said he has received a letter from Rick Roderick (ARRL) saying not many hams are contacting their senators about the Amateur Radio Parity act, Senate bill S1685. All hams should know about the act and request their senators to vote for it. This is as close as we are likely to get and hams need to push the Senate to pass it.

Program: Tom N4TL introduced the Show & Tell event for this year. Tom showed an old mechanical DX predictor that shows the sunlight on the world. Alan AB4OZ showed EMI filters built in scrap boxes, photos of his tower made from a ladder, and several test boxes. Adrian KN4CSA built a GPS unit and a solar power supply with flex solar panels and true sinewave output. Roger K4KLLK showed a transformer load tester used to determine transformer capability. Carl W8WZ built a 1930's single tube transmitter that matched one his grandfather built in 1934. Marty W4MY showed a Korean Ham magazine published by KARL (Korean Amateur Radio League). Johnny WA9SZL showed a battery charging power supply made from scrap video game parts. Albert N4AGG showed power-pole distribution boxes he built. Gary KN4AQ & Israel NC4IP Showed DMR radios which have more penetration locally then DStar. They talked about DMR and demonstrated a connection thru a repeater and an internet hot spot. Al N4EII showed quarter wave ground plane antenna for 2m made with flexible wire.

The meeting was adjourned by vice president Tom at 9:10 p.m.

Respectfully Submitted,
Robert E Chapman, NC1X
RARS Secretary

Deepest Sympathies

A transfer of \$50 has been made to the RARS / Dick Bitner Benevolent Fund in memory of Giff Moore KC4SAM (July 15, 1926 – August 28, 2017)

<http://www.legacy.com/obituaries/newsobserver/obituary.aspx?n=william-gifford-moore&pid=186538496&fhid=6292>

60th Annual BSA Jamboree on the Air

We need volunteers!!

Jamboree-on-the-Air, or JOTA, is the largest Scouting event in the world. It is held annually the third full weekend in October. JOTA uses amateur radio to link Scouts and hams around the world, around the nation, and in our community.

This year's event will be held on Saturday, October 21 from 10:00pm to 2:00pm. But to make this event successful, we need your help!

Just like last year, we will setup and operate on the lawn at the Church of Jesus Christ of Latter-Day Saints at 5060 Six Forks Road in North Raleigh. This venue offers a large parking lot for visitors and a large front lawn for staking out antenna guy lines and setting up tents. Power and restroom facilities can be easily accessed in the building and we believe that the proximity to Six Forks road will result in a few drive by visitors.

We are looking for volunteers that can help in many different capacities. Here are some ideas for things you can do to help out:

- Stand around and talk about Amateur Radio to visitors. (Isn't that easy enough?)

- Prepare some sample diagrams and explanations for showing how radio works and how signals can be transmitted around the world as well to the nearest repeater.

- Help with designing QSL cards, participation certificates, publicity, etc.

- Attend Scout meetings to discuss the event.

- Organize activities such as kit building, soldering practice, SSTV, FSTV, packet radio, and weather satellite reception. The simplest of things, such as a closed-circuit RTTY station, can generate a great deal of excitement.

- Help with setup and tear-down of the antennas, tents and equipment.

- Offer to setup and run a digital station, a Winlink station, a Echolink station, or any other mode that interests you.

- Offer to train Scouts for the Radio Merit Badge. As an aside, the largest Merit Badge Clinic on the East Coast is on November 10th and 11th in the Raleigh area. You can volunteer to teach the Electronics, the Electricity, or the Radio Merit Badges during this clinic and we can introduce those Merit Badges during JOTA.

- Help Scouts make and log their contacts. The goal is to involve as many Scouts as possible in making a contact. It is not to maximize the number of contacts or the distance of the contacts; it's about the experience for the Scouts.

If you would like to get involved, please contact Robert Cox (N4MN) at robert.m.cox@gmail.com.

You can also follow us on Facebook: JOTA.Raleigh and on Twitter: JOTA_Raleigh

The official email address for JOTA is: JOTA.Raleigh@gmail.com

Website, <http://www.scouting.org/jota.aspx>.

Robert Cox (N4MN) is a fairly new Amateur Radio Operator, an ARRL and W5YI VEC, an ARRL and RARS member. He is an Eagle Scout and has been active in Scouting as a leader and advisor for over 15 years. Rob is a former Scoutmaster for Troop 310 and has previously served as a BSA Venture Advisor (twice), a Charter Organization Representative, an Assistant Scoutmaster (twice), as LDS Merit Badge Clinic building captain and as a Merit Badge Counselor.

Amateur Radio Parity Act (ARPA)

August 8, 2017

Dear ARRL Member:

Based on feedback I've received, it seems to me that some members still don't fully understand certain features of the Amateur Radio Parity Act (ARPA) and what it is meant to do. To make things clearer, we have developed an FAQ in the format of questions and answers. Please take a few minutes and read the FAQ to learn more about the ARPA.

Here is the direct link:

<http://www.arrl.org/files/file/Regulatory/The%20Amateur%20Radio%20Parity%20Act%20FAQ.pdf>

Here is another link with additional information:

<http://www.arrl.org/amateur-radio-parity-act>

Thanks to those of you who have written your Senators in support of the ARPA. If you have not done so, please do so by clicking on the link below. It only takes a minute.

<https://arrl.rallycongress.net/ctas/urge-us-senate-to-support-amateur-radio-parity-act>

Thanks. Let's keep the effort moving!

73, Rick Roderick, K5UR

President, ARRL - The national association for Amateur Radio®

Current Public Service Opportunities

To volunteer for a Public Service event please sign up at this location <http://www.rars.org/public-service.php>

The Ham Public Service Net The HPS Net is on vacation, we will resume when the 2017 PS season begins. We will use the following repeaters in the Carolina 440 Link System:

441.725(+)(100) – Raleigh, NC Hub
443.450 (+)(100) – Cane Mt., Snow Camp, NC
444.325 (+)(100) – Holly Springs, NC
444.375 (+)(100) - Henderson, NC
444.550 (+)(100) – Coats, NC
444.775 (+)(100 – Cary, NC
444.875 (+)(100) – Wendell, NC
145.330 (-)(100) – Goldsboro, NC
442.250 (+)(107.2) - McCain/Southern Pines, NC
444.200 (+)(179.9) - Johnsonville, NC
444.025 (+)(100) - Benson, NC
442.425 (+)(100) - Buxton, NC

(The net is also accessible through IRLP Reflector 9210)

The Ham Public Service Yahoo Group link is: [Ham Public Service North Carolina](#)

WELCOME TO THE 2017 HAM PUBLIC SERVICE EVENT SIGNUP PAGE. Choose the event(s) for which you would like to volunteer and complete the sign-up form at the top of the page... note... one form for EACH event that you are volunteering. We are glad you are back. Sign up at this location <http://www.rars.org/public-service.php>

2017 Bike MS: Historic New Bern Ride

September 9-10, 2017 - Saturday and Sunday - New Bern, NC

The event features 30, 50, 75 and 100 mile rides each day, requiring SAGS, staff Shadows and Rest Stop Hams. The event benefits the National Multiple Sclerosis (MS) Society and typically draws about 2000 riders.

* Location: Union Point Park, 210 E Front St, New Bern, NC 28560

* Ham Coordinator: Brian Young (KA9QJT) for Triangle-area Hams, collaborating w/Bruce (N8UTY) of New Bern

* Website: main.nationalmssociety.org/site/TR/Bike/NCTBikeEvents?pg=entry&fr_id=28911

Current Public Service Opportunities continued

* Facebook (Optional): www.facebook.com/groups/469165586760508

* Additional Info: You are not required to register as a volunteer on the Bike MS website. Do consider making hotel arrangements now. Availability is always limited. When signing up on this website, please also include your t-shirt size.

2017 Bike MS: Historic New Bern Ride

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* Location: Union Point Park, 210 E Front St, New Bern, NC 28560

* Ham Coordinator: Brian Young (KA9QJT) for Triangle-area Hams, collaborating w/Bruce (N8UTY) of New Bern

* Website: [Bike MS New Bern](http://BikeMSNewBern.com)

* Facebook (Optional): [Bike MS Ham Radio Support group](https://www.facebook.com/BikeMSHamRadioSupportGroup)

* Additional Info: You are not required to register as a volunteer on the Bike MS website. Do consider making hotel arrangements now. Availability is always limited. When signing up on this website, please also include your t-shirt size.

2017 Cycle for Life

September 30, 2017 - Saturday - Research Triangle Park, NC

This bicycle event features 32 and 65 mile routes that benefit the Cystic Fibrosis Foundation. SAGS and Rest Stop Hams are needed.

* Location: The Frontier, 800 Park Offices Dr, Research Triangle Park, NC 27709

* Ham Coordinator: Wallace Smith (KJ4UKV)

* Website: [Raleigh Cycle For Life](http://RaleighCycleForLife.com)

2017 Le Tour de Femme

October 14, 2017 - Saturday - Cary, NC

This womens only bicycle event features 15, 31 and 62 mile routes that benefit REX Hospital Angel Fund and the Kay Yow Cancer Fund. SAGS and Rest Stop Hams are needed.

* Location: Cycling Spoken Here, 1377 N.W. Maynard Rd. Cary, NC 27513

Current Public Service Opportunities continued

* Ham Coordinator: John Stone (K3RHJ)

* Website: [Le Tour de Femme](#)

2017 Fall Rally

October 22, 2017 - Sunday - Holly Springs, NC

This bicycle event features 22, 39, 52 and 72 mile routes that benefit the National MS Society. SAGS and Rest Stop Hams are needed.

* Location: Carolina Brewing Co., 140 Thomas Mill Rd., Holly Springs, NC 27544

* Ham Coordinator: John Stone (K3RHJ)

* Website: [Fall Rally](#)

2017 CheetahFest

October 28, 2017 - Saturday - Rougemont, NC

The bicycle event has 30, 62, 100 mile routes that benefit the American Diabetes Association. SAGS and Rest Stop Hams are needed.

* Location: Down 2 Earth Farms, 8115 New Sharon Church Rd., Rougemont, NC 27572

* Ham Coordinator: John Stone (K3RHJ)

* Website: [2017 CheetahFest](#)

RARS Classifieds

Copied from www.rars.org/classifieds.php

The items below were listed within the last 30 days on the RARS website.

Wanted Baofeng battery charger for UV-5R

Posted August 28th, 2017 by: WZ0Q

Contact: wz0q@outlook.com

Looking to buy, or borrow or if you want to give one away, I am in need of one.

Battery charger for a Baofeng, UV-5R,

Dennis

wz0q

919-413-5998.

RARS Classifieds continued

Ham Radio items for sale

Posted August 27th, 2017 by: K4LXV

Contact: k4lxv@twc.com

K4LXV for sale

Henry 2K amplifier, solid state power supply,w/soft start & Peter Dahl plate xfmr. Two 3-400Z tubes in final. \$800.

Gap 'Eagle' vertical ant, no radials required, 40-10 meters,includes tilt-over base. You must remove. \$100.

Ameritron RCS-4, four antenna remote coax switch. Uses coax cable for control \$50.

Ameritron AWM-30, peak and average indication Wattmeter, 160-10 Meters \$75.

Ameritron ARB-704 amp buffer interface.Includes interface cable for Icom \$35.

EZ-Way RBX 40 crank up Tilt over tower on ground. Missing hardware & cables.(see www.kf7p.com for some items)(make offer).

2 ea. 3-400Z used good tubes.\$150 for the pair.

All equipment has manuals.Some has boxes.

Larry Young, K4LXV Phone 919-612-1447.

Five Items For Sale.

Posted August 4th, 2017 by: W4MBD

Contact: mcneillr@ec.rr.com

Yaesu FT-857 compact HF, VHF, UHF Transceiver, never used, \$750

Yaesu Atas-120A Automatic antenna tuner, new in package, \$275

Diamond K400C Antenna mount, never used, \$50

Diesel model 380-136 SWR Power Meter, new, \$20

For more information contact Robert, W4MBD at mcneillr@ec.rr.com

RARS Classifieds continued

LDG M-7600 External meter for ICOM IC-7600, \$40.00

Contact Tom N4TL, NTL2@yahoo.com

I don't have room for this meter anymore. It works fine and includes the manual, power cable and interface cable. This is from the LDG website.

The LDG M-7600 provides a lavish 4 inch meter for the IC-7600. It will display S-meter on receive, or power out, SWR, ALC level or supply voltages, all selectable from the rig's setup menu. What's more, the M-7600 and the virtual meter on your radio can work together; for example, you can display SWR on the radio's meter and power output on the M-7600.

The M-7600 comes fully assembled and calibrated; both the radio and power cables are included.

Rohn 25 65' Tower and Antenna System available for Sale

Posted September 4th, 2017 by: K4HF

Contact: k4hf@arrl.net

For RARS Member Greg Rogers, NOGE. This system is one acquired from me last summer and he has determined it will not be installed as planned and is now available for pickup in Angier, NC. Rohn 25 guyed tower with accessories and four yagi antennas and side mounted dual band vertical covering 40 meters through 440 MHz. With documentation.

Contact Greg at grogers001@nc.rr.com Thanks, Chuck



I made it through the pile up.

Testing VHF and UHF Antennas
August 2017
144/220/440 tri-band antennas
Ed Fong TBJ-1 and Comet CX-333
By Chuck KW4KZ and Tadd KA2DEW

Chuck KW4KZ and Tadd KA2DEW tested antennas on August 26 2017 in the afternoon from Chuck's house in North ENO Township. We had two purposes. First was to find out how the Ed Fong TBJ-1 antenna at \$60 compared to the \$160 CX333 offering from Comet. Second was to engineer and demonstrate a test methodology, accessible to Amateur Radio hobbyists, for antenna reviews. I was tired of antenna reviews that ended with "We could work repeaters 100 miles away!" or some such.

Our testing included a 1/4 wave ground plane, home-made from a set of four 20" copper wires soldered to the corners of a panel mount SO239 bulkhead connector, and a tuned copper center conductor for 2m, 220 or 440, soldered to the center pin of the SO239 connector. The 1/4 wave ground plane antenna served as a reference for the other two antennas.

Ed Fong TBJ-1

The Ed Fong TBJ-1 antenna is a multipurpose (including ham radio) 7 foot tall antenna made of PCV tubing with two end-caps, both removable. The bottom end-cap is drilled for either a SO239 socket or N socket. The antenna has no mounting hardware but it can be suspended from the top or mounted with user supplied brackets. Housing and mounting modifications can be made to the antenna using store-bought PVC accessories and PVC glue. The antenna is sold direct from the manufacturer at EdsAntennas@Gmail.com for \$60 plus \$13 shipping. Ed Fong has a website at Ed's Antennas. Down near the bottom of that page you can find a PDF download titled fong-qst-2017-march.pdf which is the QST story about the TBJ-1 antenna.

Ed Fong designed the antenna to have no ground radials and to have a low price. Furthermore it can be taken out of service and tossed in the back of a truck with very little chance of damaging the antenna. The antenna is shipped in its single piece housing. The antenna is ideal for dragging through a pipe or through foliage because it has no horizontal projections or anything to snag. The antenna is made from easily obtained PVC tubing so even if run over by a truck, it could be salvaged and repaired.

Ed is easy to talk to and has been known to take and make phone calls to resolve any problems. He even does teleconferences to clubs across the country.

The coax connector is out in the environment so waterproofing must be added. Support mechanism must be added by the user as no U-clamps or brackets of any kind are supplied.

The TBJ-1 antenna is a recent addition to the lineup as of late 2016 or early 2017.

Comet CX-333

The Comet CX-333 is a made for ham-radio base-station service 10 foot tall ground plane, mast mounted (support for 1" to 2.5" mast) with four rigid 20" ground radials at the bottom. The coax connector, after installation, is out of the weather in the 8" long pipe which serves as the support for the antenna. The antenna sits on and is locked into the top of that pipe with a single hex-head machine bolt. The 8" long pipe is secured to the mast with a pair of included cast brackets incorporating a built-in saddle shape and two U-clamps. Assembly is trivial and the unit appears very professional and mechanically sound. It looks like it could survive or 15 years on a tall tower. The Comet antenna company US representatives accept emails from their vendors and are very responsive with replacement parts (in my experience with a different antenna, shipped directly to the customer without any commitment for return or payment!).

The antenna, after disassembly (in the case of removal) is in six pieces, some with lose screws. If tossed in the back of a truck without disassembly, damage is inevitable.

Comet antennas do survive well but the outer shell begins to chalk after a year or two outdoors.

This model of antenna has been on the market since 2003 or before. Instructions are available online by searching for "comet antenna tri-band-3"

The Comet antenna is shipped for about \$170 from several ham vendors including Ham Radio Outlet.

Our Results

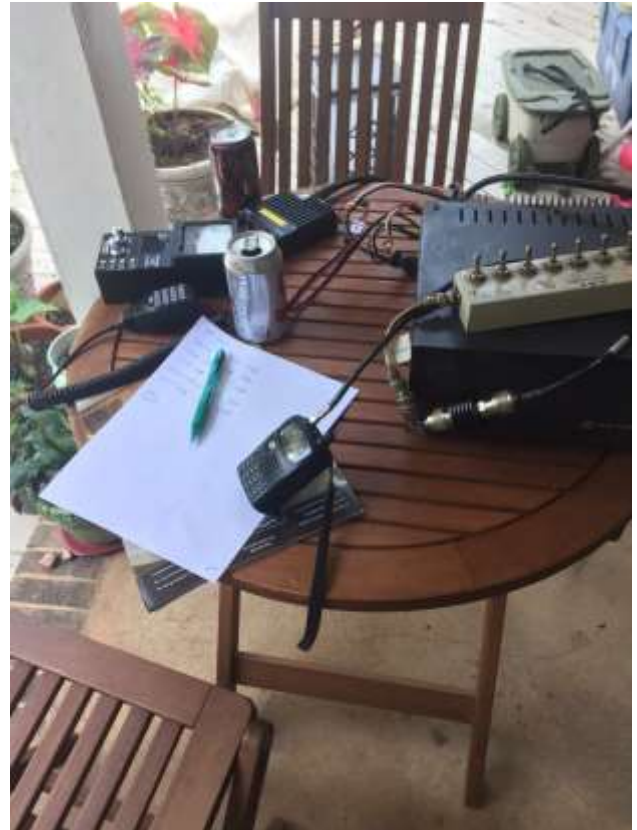
band	Ed Fong TBJ-1	Comet CX-333
2m band	3.1dB better than the ground plane	
plane	3.7dB better than the ground plane	



220 band 4.7dB worse than the ground
plane 0.7dB better than the ground plane.
440 band 8dB worse than the ground
plane 1.7dB better than the ground plane

Experimental Method

Our plan was to find several repeaters on each of the three covered bands and work each repeater from several locations by moving the masts. We ended up with five 2m band repeaters, two 220 band repeaters, and two 440 band repeaters. The number of 220 and 440 repeaters was limited by the range from our 1/4 wave antenna and our location, seven miles northwest of Durham NC. We mounted the antennas sequentially on a 20' mast on the pool patio behind a single-story house which is somewhat above average terrain though surrounded by 70' to 90' high trees. We tested against each of the repeaters, then moved the mast and tested again. All moves were 5' or more. A total of 81 separate radio tests were performed.



The 1/4 wave antenna tests were done between 2pm and 3pm. After doing the 1/4 wave tests and gathering 3 test numbers for each repeater, we removed the 1/4 wave and mounted the CX-333. The Comet CX-333 tests were done between 3:30pm and 4pm. After the Comet CX-333 we mounted the Ed Fong TBJ-1 antenna and ran its numbers. Those were between 4:30pm and 5:20pm. I don't know if the time of day had anything to do with performance. I suspect not.

The numbers were gathered by running a Kenwood TH-F6A HT 3-band HT through a 10dB attenuator, and then into a 1dB step attenuator. The attenuation numbers listed are in addition to 10dB attenuation on the output of the Kenwood TH-F6A HT in high power. While listening on another tri-band radio on a separate 3-band antenna, we keyed up each of the repeaters and tested the maximum attenuation we could put in line to BRING-UP the repeater. We weren't interested in how strong we were through the repeater, only that the repeater would come up. The method was to assert high attenuation, start a transmission, and then reduce the attenuation until the repeater keyed. After the repeater was up I did verification by toggling the attenuation in and out to see if this was consistent. On some repeaters the key-up level was higher than the level required to keep the repeater keyed (hysteresis). On others the key-up level was lower than the level required to keep the repeater keyed (de-sense).

The antennas used included an Ed Fong tri-band antenna TBJ-1 purchased October 13, 2015. The

other antenna was a Comet CX333 triband vertical from HRO \$160 purchased in August 2017. The 1/4 wave antenna was made from ROMEX house wire and a SO239 4-screw bulkhead connector.

Discussion

I would like to have more data to get a more accurate result. I didn't want to run the HT into the step attenuator without first dropping its signal. I didn't want to break the step attenuator. With only 700mW (best guess) and with the 1/4 wave ground plane as the start antenna I rejected any repeaters which were not workable with the ground plan antennas. Thus we could only bring up two repeaters on 220 and two repeaters on 440.

As you can see from the test data, the gain delta between the antennas is not much different than the delta in path performance shown by moving the antenna. We may want to have more antenna positions per repeater. We needed to be much quicker about this because I don't think we could double the number of sites without incurring potential time-of-day effects on our results.

No measurement of stray RF on the coax was made. This is probably something which should be performed.

I had a conversation with Ed Fong. Ed said that our measurements were spot on and that he expected the TBJ-1 to work about 10dB worse than the CX-333 on 440 because the TBJ-1 has a single vertical half-wave element on 440 compared to the CX-333 having five vertical 5/8 wave elements on 440. The TBJ-1 should also work worse than the CX-333 on 220, again for the difference in elements in each anten-



The 1/4 wave antenna on top of the mast was under test. The two yagis below were for another project and are not used for this test.

na. Ed said the key requirement for his antenna is that it has to do all 3 bands without ground radials, and it has to be cheap. He had no intention of getting market share against the \$160 Comet antenna. He also said he has respect for Comet's design and specifications and that they generally are very good at reporting honest specifications. He mentioned a few other manufacturers which are not so honest.

Conclusion

Quarter wave ground planes work very well, especially for their cost, but require separate coax runs, separate mounting positions, and a multiplexer to share coax.

If you need a tri-band 144/220/440 antenna for long-term mounting at a base station, and are spending more than \$200 on the radio and coax hooked to it, go with the CX-333.

If you are going with a transient, emergency, backpacking, or frequently packed and unpacked set of gear, the TBJ-1 will likely be the better survivor.

If you are going to hook a Chinese tri-band mobile radio to the antenna and cost is more of an object than performance, or ease of installation, then go with the TBJ-1.

If your only use is 2m, there is nothing in the either of these antennas to recommend it so get a monoband J-pole, Hustler G6, or 1/4 wave ground plane.

If going with attic use, make separate ground planes for each band. A wire ground plane using an SO239 socket costs about \$3. Then work on some home-made wire Yagi antennas or aluminum foil corner reflectors.

If cost is an object and you need a roof-mount or tower mount antenna, use either a 1/4 wave ground plane from Arrow Antennas, or a Comet GP-1 antenna. Add a 220 Yagi later?

73 de Chuck KW4KZ and Tadd KA2DEW



I didn't make it through the pile up.